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ELECTRIC VEHICLE FEE RESTRUCTURING

Prepared by High Street Consulting Group

This Transportation Research Synthesis (TRS) investigates potential strategies for equitable fee structuring among motorists in Minnesota as adoption of electric vehicles (EVs) continues to accelerate. To examine funding structures that could address revenue shortfalls due to EV deployment, this TRS summarizes other states' approaches to capturing revenue from EVs.



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Introduction

Motor fuel taxes levied as a price per gallon have historically been a well-designed user-fee for transportation systems: the more people use public roads, the more gasoline or diesel they consume, and the more tax they pay. Motor fuel taxes capture the negative externalities caused by driving petroleum-powered vehicles, internalizing the costs of contributions to road wear-and-tear, traffic congestion, and pollution.

However, the motor fuel tax's ability to fund transportation projects has eroded over the years as vehicles have become more efficient and electric vehicle adoption has expanded. In 2020, 25 percent of Americans said their next car will be electric, an increase from 20 percent in 2018.¹ Despite making up less than 1 percent of total light-duty vehicle registrations in Minnesota, thousands of new electric vehicles (EVs) are hitting the road every year. In many states, increased EV adoption will lead to lower gas tax revenues, which have already been declining as traditional internal combustion engine (ICE) vehicles become more fuel efficient.

With both federal and state tax revenue per vehicle mile traveled on a steady decline, the transportation funding gap has been widening as the demand for infrastructure improvements has grown. Many states are responding to and anticipating a further decline in motor fuel tax revenue, requiring policymakers to consider other ways to pay for transportation infrastructure. Insufficient investment in transportation infrastructure can lead to long-term costs associated with deferred maintenance or other improvements, bridge closures, lane reductions, greater congestion, increased travel delay costs, diminished reliability of travel, and safety impacts. Insufficient investment can also impact a state's economic competitiveness and quality of life.

The Minnesota Department of Transportation (MnDOT), Office of Sustainability and Public Health (OSPH) supported the development of this Transportation Research Synthesis (TRS), which summarizes existing revenue structures in different states to identify potential strategies for equitable fee structuring among motorists in Minnesota as adoption of EVs continues to accelerate. To examine funding structures that could address shortfalls in the Highway User Tax Distribution Fund (HUTDF) due to EV deployment, this TRS outlines four options that the state could pursue to maintain both current revenue levels and ensure an equitable driving experience. Distance-based fees (e.g., Mileage-Based User Fees, Road Usage Charges, and Vehicle Miles Traveled taxes) are not included in this TRS as they are already the subject of existing state research efforts.

¹ MnDOT EV Fact Sheet (June 2023)

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Summary of Project Findings

Definitions of electric vehicles (EVs) vary between states and vehicle types. To identify distinct revenue options for this research, a Battery Electric Vehicle (BEV) is defined as a vehicle powered only by electricity supplied through a rechargeable storage battery, fuel cell, or other portable source of electrical current and is not capable of using gasoline, diesel fuel, or other fuels. A Plug-in Hybrid Electric Vehicle (PHEV) is defined as a vehicle with a hybrid propulsion system that operates on both combustible fuel (e.g., gasoline, diesel, or other fuels) and stored electric energy that uses a chargeable energy storage device. When referring to both BEVs and PHEVs, the term EV is used.

MnDOT's Transportation Funds Forecast from November 2023 projects an average annual decrease in fuel consumption (-1%) and fuel tax revenue through FY2027 due to both increases in vehicle fuel efficiency and increased deployment of EVs. To address this funding shortfall, this TRS examines existing EV registration fees and charging taxes in different states that could inform future policy in Minnesota to maintain both current revenue levels and ensure an equitable driving experience.

EV registration fees can apply to BEVs alone, PHEVs alone, or all EVs. At the time of this research, 35 states require an EV registration fee. Ten states place a fee only on BEVs, including Minnesota which charges a \$75 annual surcharge for BEVs, and two states place a fee only on PHEVs. Twenty-three states place a fee on both BEVs and PHEVs. In these cases, the PHEV fee is typically lower than the BEV fee, as it is expected that PHEV drivers will refuel their vehicle with gasoline and pay a motor fuel or a gas tax. Annual registration fees for BEVs range from \$50 to \$450.75 and annual fees for PHEVs range from \$47.50 and \$255. States structure registration fees for electric vehicles as flat fees, scaled fees, or indexed/increasing fees.

- Twenty-four states have a flat fee structure, nine of which provide a different flat fee for BEVs and PHEVs. Flat BEV fees range between \$50 and \$212.85, while flat PHEV fees range between \$50 and \$150.
- Fifteen states use a scaled fee structure based on weight, age, value, miles per gallon, range, and/or horsepower in which vehicles are taxed at different rates based on their characteristics. Weight is the most frequently used scaling metric; 10 states use a weight-based element in their scale. Age is the second most frequently used scaling metrics; eight states use an age-based element in their scale. When focusing only on passenger vehicles, scaled BEV fees range between \$86 and \$450.75, while scaled PHEV fees range from \$47.50 to \$255.
- Seven states structure additional EV registration fees to grow over time by establishing an annual fee increase or by tying the fees to an inflation-related metric (e.g., consumer price index, motor vehicle fuel tax, inflation rate).

Seven states have implemented or are scheduled to implement an excise tax on kilowatt hours charged at publicly available EV charging stations, which are accessible to all users and are frequently located where vehicle owners are highly concentrated and parked for long periods of time, such as shopping centers, airports, hotels, government offices, and other businesses, as well as along highway corridors or at urban charging hubs.

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Charging fees range from \$0.0172 per kilowatt hour to \$0.03 per kilowatt hour. This TRS also examines revenue and equity impacts, the logistics of implementing EV fees and taxes, as well as incentives to encourage EV adoption.

Methodology

MnDOT provided the consultant team with an EV Fee Structuring Problem Statement and several MnDOT publications, namely the Transportation Revenue Forecast (November 2023),² EV Fact Sheet (June 2023),³ EV Infrastructure Plan,⁴ and the Minnesota Electric Vehicle Assessment (2021)⁵.

The consultant team held a 30-minute meeting with Susan Howard and Emily Kesselman of the American Association of State Highway and Transportation Officials (AASHTO) to identify existing work and other resources that were used to lay the foundation for desk-based research.

The consultant team conducted desk-based research using these resources and Transportation Governance and Finance: A 50-State Review of State Legislatures and Departments of Transportation (3rd Edition)⁶, National Conference of State Legislature Brief on Special Fees on Plug-In Hybrid and Electric Vehicles,⁷ AASHTO Matrix of Illustrative Surface Transportation Revenue Options⁸, and publications from the Tax Foundation.⁹ These resources are cited throughout the TRS when specifically referenced.

Background

Vehicle Definitions

Definitions of electric and hybrid vehicles vary between states, and in some cases, there is overlap between the terms, making the ways in which policies are applied to vehicles challenging to parse. In 2023, nearly 50 EV models were available for sale in the United States, compared to 30 models in 2021.¹⁰ As options for EV models expand, definitions and terms become murky. How a state defines electric and hybrid vehicles impacts the

² <https://www.dot.state.mn.us/funding/>

³ https://edocs-public.dot.state.mn.us/edocs_public/DMResultSet/download?docId=34217835

⁴ <https://www.dot.state.mn.us/sustainability/electric-vehicles.html>

⁵ https://edocs-public.dot.state.mn.us/edocs_public/DMResultSet/Urlsearch?columns=docnumber,docname&folderid=19994055

⁶ <https://transportation.org/funding-finance/resources/>

⁷ <https://www.ncsl.org/energy/special-fees-on-plug-in-hybrid-and-electric-vehicles>

⁸ https://transportation.org/funding-finance/wp-content/uploads/sites/42/2023/01/Matrix_of_Funding_Options.pdf

⁹ <https://taxfoundation.org/data/all/state/electric-vehicles-ev-taxes-state/>

¹⁰ MnDOT EV Fact Sheet (June 2023)

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applicability of the revenue policy and revenue impacts. Table 1 details the definitions used in electric and hybrid vehicle revenue policies in each state.

Table 1. Inventory of Vehicle Type Definitions by State

Vehicle Type	Definition	Additional Constraints	State
Electric Vehicle <i>(battery electric vehicle, nonhybrid electric vehicle, electric motor vehicle, all electric vehicle)</i>	A vehicle powered only by electricity and is not capable of using gasoline, diesel fuel or alternative fuel. It is powered solely by electricity supplied through a rechargeable storage battery, fuel cell or other portable source of electrical current.	None	AL, AR, ID, IN, IO, KS, LA, MI, MN, ND, TN, UT, VA, WY
		Gross weight of 10,000lbs or less	TN
		8,000lbs or less	IL
	The definition excludes plug-in hybrid electric vehicles.	Used primarily on public roads, has a capacity of at least 4kwh, has not been modified, and does not exceed 8,500lbs	NC
		Noncommercial motor vehicle that that may be legally operated on the interstate highways in this state and eligible for registration pursuant to the laws of this state.	SD
		Can travel at least 30 miles only on battery power	WA
		Battery capacity of 20kwh or more	OK
	A vehicle that has plug-in charging capability, regardless of whether the vehicle is powered by only an electric motor or both a combustion engine and electric motor; includes plug-in hybrids.	Used on public roads and required to have a license tag.	MS
		None	KY, OH
		Has a battery of at least 5kwh capacity, has four wheels, and is made for use on public roads	OK
Hybrid Vehicle <i>(hybrid motor vehicle, hybrid electric motor vehicle, plug-in hybrid vehicle)</i>	A vehicle with a hybrid propulsion system that operates on both combustible fuel (e.g., gasoline, diesel, alternative fuel) and stored electric energy that uses a chargeable energy storage device.	None	CO, ID, IO LA, MI, ND, OH, SC, UT
		Uses a regenerative braking system	IN
		Used primarily on public roads and has a license tag.	MS
	A vehicle that does not have plug-in charging capability and is powered by a combination of an internal combustion engine and an electric motor.	None	KY
Alternative Fuel Vehicle	A vehicle powered by a combustible gas, liquid, or other source of energy that is neither a motor fuel nor electricity and excludes hybrid electric vehicles.	None	VA
	A vehicle fueled solely by an alternative fuel not otherwise taxed under the motor fuel laws (i.e., motor vehicle fuel, diesel fuel, and compressed fuel are not included). This includes electricity and solar power.	None	NE, GA
	A vehicle fueled by electricity, liquefied petroleum gas (propane), compressed natural gas, or a combination of liquefied petroleum gas and a compressed natural gas or electricity used in an internal combustion engine or motor.	None	MO
Zero Emissions Vehicle	A vehicle that produces no emissions of criteria pollutants, toxic air contaminants or greenhouse gases when stationary or operating,	None	CA

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MnDOT groups electric vehicles (EVs) into two categories: battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). BEVs make up about 75 percent of new EV sales in Minnesota.¹¹ For the purpose of identifying distinct revenue options for this research, the following definitions were used:

- **Battery Electric Vehicle (BEV)** means a vehicle powered only by electricity and is not capable of using gasoline, diesel fuel, or other fuels. It is powered solely by electricity supplied through a rechargeable storage battery, fuel cell, or other portable source of electrical current. The definition excludes plug-in hybrid electric vehicles. Sometimes, BEVs are categorized under broader categories of alternative fuel vehicles and zero-emission vehicles.
- **Plug-in hybrid electric vehicle (PHEV)** means a vehicle with a hybrid propulsion system that operates on both combustible fuel (e.g., gasoline, diesel, or other fuels) and stored electric energy that uses a chargeable energy storage device. PHEVs are also referred to as plug-in hybrid vehicles.
- **Electric Vehicle (EV)** encompasses both BEVs and PHEVs.

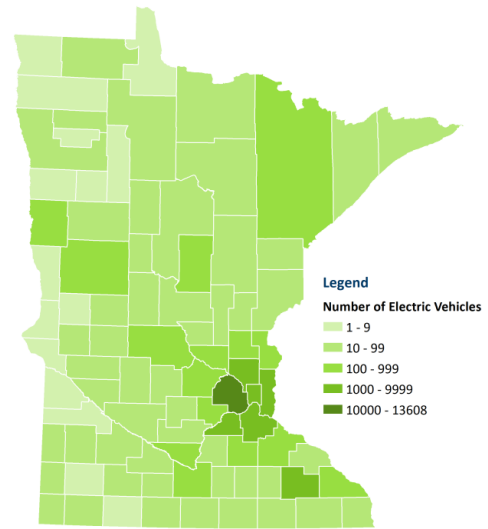


Figure 1. EV Registration in Minnesota (2022)

SOURCE: MN EV INFRASTRUCTURE PLAN

Electric Vehicles in Minnesota

EV Adoption

It is anticipated that electric vehicles will become a progressively larger percentage of the vehicle fleet as new policies at the local, state, and federal levels accelerate EV adoption. In 2024, state regulations will take effect encouraging the “clean car rules”, which will require manufacturers and dealers to increase EV availability in Minnesota by supplying more electric vehicles to the marketplace.¹² In addition to federal EV incentives, some states have implemented tax credits, rebates, deductions, and exemptions on the purchase of EVs (this topic is further explored in the Use of Incentives to Encourage Adoption of EVs section).

Minnesota’s 2022 State Multimodal Transportation Plan (SMTP) and the Minnesota Climate Action Framework both have a goal for EVs to make up 20 percent of light-duty vehicles on the road by 2030. Additionally, the

¹¹ MnDOT EV Fact Sheet (June 2023)

¹² <https://www.conservationminnesota.org/clean-cars-minnesota>

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MN100x50 Goal set in the 2019 Pathways to Decarbonizing Transportation in Minnesota plan aims to achieve zero emissions from transportation by 2050. To reach light-duty vehicles and emission goals, EVs would need to make up 60 percent of all new vehicle sales in 2030. As of January 2024, EVs make up 0.68 percent (50,633) of total light-duty vehicle registrations and 5.61 percent (14,890) of annual new vehicle sales.¹³ Seventy percent of EVs are BEVs and 30 percent are PHEVs. While EV sales and registrations are increasing over time, they are not on track to meet the ambitious EV adoption and emission reductions goals.

EV adoption varies by location. The highest numbers of registered EVs are in the Twin Cities and other urbanized areas across the state, such as Rochester and Duluth(Figure 1).

EV Infrastructure

As of January 2024, there are 1,467 Level 2 ports and 481 direct current fast charger (DCFC) publicly available EV charging ports across Minnesota as reported on MnDOT's Electric Vehicle Dashboard.^{14,15} Minnesota state agencies are preparing to build out additional EV charging infrastructure using funds from the Minnesota Pollution Control Agency's Climate Reduction Grant Program to plan and implement reductions in greenhouse gas emissions and other harmful air pollution,¹⁶ the National Electric Vehicle Infrastructure (NEVI) formula program to strategically deploy an interconnected, publicly available EV charging station network, the federal Carbon Reduction Program (CRP) to reduce carbon pollution from on-road highway sources, and the Volkswagen settlement.

The NEVI Formula Program provides funds to states to build a convenient, affordable, reliable, and equitable fast charging network for EVs across the United States. Over five years (federal fiscal years 2022-2026), Minnesota expects to receive and invest about \$68 million from the NEVI Formula Program. The NEVI Formula Program funds must first be used to build out a state's Alternative Fuel Corridors (AFCs) with fast charging stations as described in FHWA Final NEVI Standards and Requirements. In Minnesota, the AFCs for EV charging are Interstate 94 and Interstate 35.

¹³<https://www.dot.state.mn.us/sustainability/electric-vehicle-dashboard.html> and <https://atlaspolicy.com/evaluatemn/>

¹⁴ <https://www.transportation.gov/rural/ev/toolkit/ev-basics/charging-speeds> *Level 2 equipment offers higher-rate AC charging through 208-240V electrical service, and is common for home, workplace, and public charging. Level 2 chargers can charge a BEV to 80 percent from empty in 4-10 hours and a PHEV in 1-2 hours. DCFCs offers rapid charging along heavy-traffic corridors at installed stations. DCFC equipment can charge a BEV to 80 percent in just 20 minutes to 1 hour. Most PHEVs currently on the market do not work with DCFCs.*

¹⁵ <https://www.dot.state.mn.us/sustainability/electric-vehicle-dashboard.html> (Accessed January 2024, noted as last updated January 13, 2024)

¹⁶ <https://www.pca.state.mn.us/business-with-us/climate-pollution-reduction-grants>

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The Minnesota Electric Vehicle Infrastructure Plan (EV Plan)¹⁷ describes how Minnesota will spend the NEVI Formula Program funds. MnDOT developed the EV Plan in coordination with the public and partners throughout the state. The EV Plan’s vision is a to develop a “network that provides all Minnesotans the choice to drive or ride in EVs, with a goal of developing a convenient, reliable, affordable and equitable charging experience.”

As EV infrastructure expands across the state, owning an EV will become more attractive to drivers.

Transportation Revenue in Minnesota

Funding Structure of Minnesota’s Highway User Tax Distribution Fund

Minnesota’s Highway User Tax Distribution Fund (HUTDF) has three major funding sources: the motor fuel excise tax (gas tax), the motor vehicle registration tax (tab fees), and the motor vehicle sales tax (MVST). Taxes collected on auto parts sales, car rentals and car leasing also contribute to the HUTDF.¹⁸

As of January 1, 2024, Minnesota’s motor fuel excise tax taxes gasoline at a combined rate of \$0.0285 per gallon.

In Minnesota, the registration fee structure is scaled based on the value and age of the vehicle. MnDOT’s base registration fee is \$10. On top of that, users are charged a percentage (1.285% - 1.575%) of their vehicles depreciated base value by year (10%-100%) for the first ten years of vehicle ownership. After year 11, the registration fee is a flat \$20. BEV owners in Minnesota are required to pay an additional \$75 annual registration fee; this fee is applied only to vehicles that are powered exclusively by electricity. It does not apply to PHEVs or other alternative fuel vehicles.

The Minnesota Motor Vehicle Sales Tax (MVST) is a 6.875 percent tax on the sale of new and used motor vehicles. In 2024, EVs on average are more expensive than their internal combustion counterparts; therefore, Minnesota EV owners overall pay higher MVST than ICE vehicle owners (further detailed in the **Revenue** section).

All revenue collected in the HUTDF is constitutionally dedicated for “highway purposes.” The majority (95 percent) of the HUTDF is distributed to three other funds: the Trunk Highway Fund (TRF), the County State-Aid Highway (CSAH) fund, and the Municipal State-Aid Street (MSAS) fund, while the remaining five percent is distributed through legislative reallocation.

illustrates the revenue sources for the HUTDF and how those funds are allocated across programs.

¹⁷ <https://talk.dot.state.mn.us/ev-infrastructure-plan>

¹⁸ AASHTO 50 state resource and MnDOT resource

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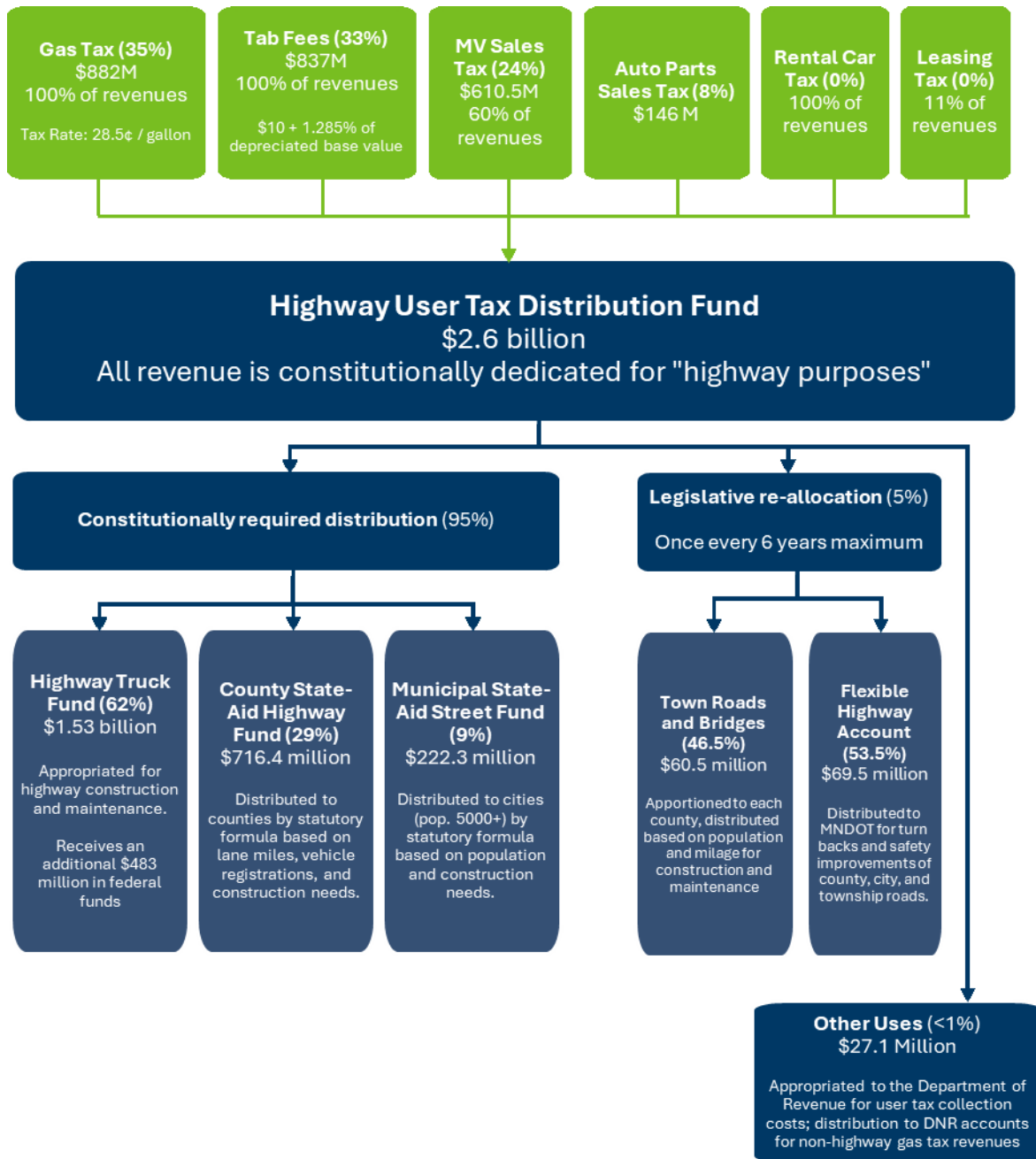


Figure 2. HUTDF Funding Structure

SOURCE: SENATE COUNSEL, RESEARCH, AND FISCAL ANALYSIS OFFICE

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HUTDF Revenue Trends

Figure 3 details HUTDF revenues attributed to gas taxes, registration (tab) fees, and MVST between FY2013 and FY2023. Gas taxes as a percentage of total revenue decreased (-12.2%) from 2013 to 2023. MVST as a percentage of total revenue has increased slightly (+5%) over the last ten years, while the share of total revenue from tab fees has remained relatively constant (-1%).

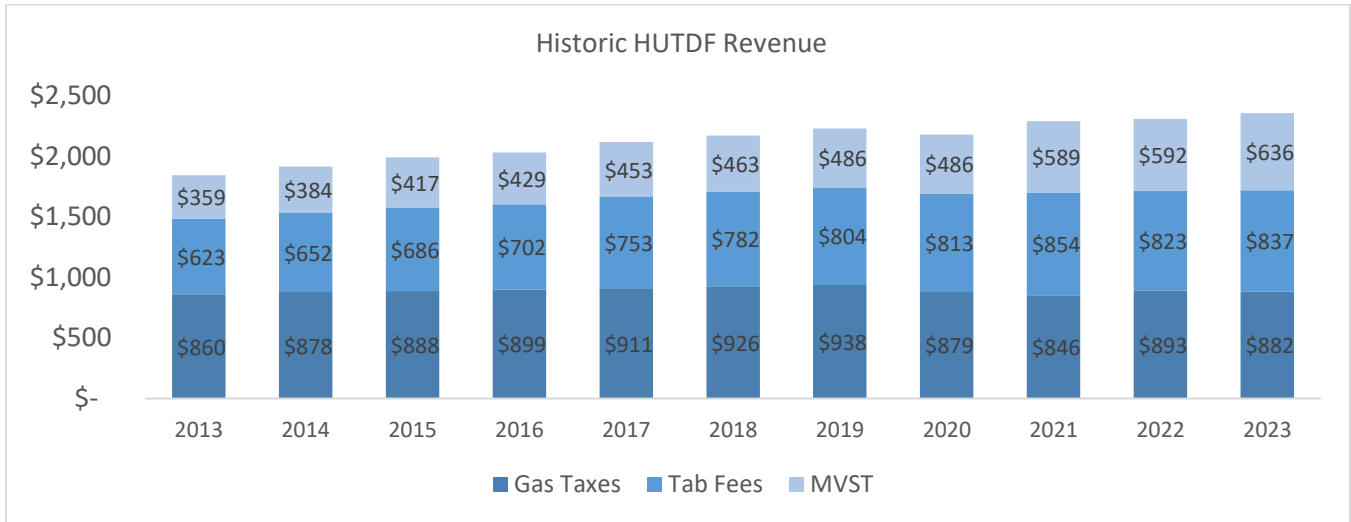


Figure 3. HUTDF Revenue from Three Primary Sources (FY 2013-2023 Actuals)

SOURCE: MNDOT TRANSPORTATION FUNDS FORECAST (NOVEMBER 2023)

MnDOT’s Transportation Funds Forecast from November 2023 projects an average annual decrease in fuel consumption (-1%) and fuel tax revenue through FY2027 due to both increases in vehicle fuel efficiency and increased deployment of EVs (from \$882m in 2023 to approximately \$847m in 2027). MVST revenues are anticipated to decrease slightly in FY2024. Starting in FY2025 HUTDF revenue is projected to increase due to the annual indexing factor increasing the tax rate, which helps to address the negative effect of inflation on transportation funding.

This TRS examines fees and taxes that could be placed on EVs to address the decline in gas taxes as a percentage of total HUTDF revenue.

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Options to Address Transportation Funding Shortfalls from Increased Used of Electric Vehicles

This section outlines components of revenue options which other states have adopted to address transportation funding shortfalls from the increased use of electric vehicles. A detailed state-by-state summary is available in the Appendix.

Registration Fees

States structure registration fees for electric vehicles as flat fees, scaled fees, or indexed/increasing fees (defined in the following sections). These fees are typically assessed in addition to traditional motor vehicle registration fees. However, in some cases, the EV fees are total, and not in addition to traditional motor vehicle registration fees.

EV registration fees can apply to BEVs alone, PHEVs alone, or both BEVs and PHEVs. At the time of this research, 35 states require an EV registration fee. 10 states place a fee only on BEVs and two states (Colorado and Ohio) place a fee only on PHEVs. Twenty-three states place a fee on both BEVs and PHEVs. In these cases, the PHEV fee is typically lower than the BEV fee, as it is expected that PHEV drivers will refuel their vehicle with gasoline and pay a motor fuel or a gas tax. Annual fees for BEVs range from \$50 to \$450.75 and annual fees for PHEVs range from \$47.50 and \$255.

Option 1: Flat EV Registration Fee

A flat EV registration fee is a set dollar amount charged annually to drivers registering an EV. Twenty-four states have a flat fee structure, nine of which provide a different flat fee for BEVs and PHEVs. In 23 states, flat EV registration fees are added to a traditional registration fee; three states structure their flat EV registration fees to include the traditional registration fee. Flat BEV fees range between \$50 and \$212.85, while flat PHEV fees range between \$50 and \$150 as illustrated in Table 2 and Figure 4.

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Table 2. States with Flat EV Registration Fees

State	BEV Fees	PHEV Fees	Additional Notes
Arkansas	\$200	\$100	The traditional registration fee has a scaled structure. BEVs and PHEVs have an additional flat fee. This results in the BEV and PHEV also following a scaled fee structure.
Colorado		\$50	Fees are total, not additional to registration fees.
Georgia	\$212.78		BEV fees are in addition to a flat registration fee, which is applied to all vehicles.
Hawaii	\$50		The traditional registration fee has a scaled structure. BEVs have an additional flat fee. This results in BEVs also following a scaled fee structure.
Idaho	\$140	\$75	The traditional registration fee has a scaled structure. BEVs and PHEVs have an additional flat fee. This results in BEVs and PHEVs also following a scaled fee structure.
Iowa	\$130	\$65	The traditional registration fee has a scaled structure. BEVs and PHEVs have an additional flat fee. This results in BEVs and PHEVs also following a scaled fee structure.
Illinois	\$100		BEV fees are in addition to a flat registration fee, which is applied to all vehicles.
Kansas	\$100	\$50	Fees are total, not additional to registration fees.
Kentucky	\$120	\$60	BEV and PHEV fees are in addition to a flat registration fee, which is applied to all vehicles.
Louisiana	\$110	\$60	BEV and PHEV fees are in addition to a flat registration fee, which is applied to all vehicles.
Minnesota	\$75		Value, and age-based fees are built into the traditional fee structure.
Nebraska	\$75		BEV fees are in addition to a flat registration fee, which is applied to all vehicles.
North Carolina	\$130		BEV fees are in addition to a flat registration fee, which is applied to all vehicles.
North Dakota	\$120	\$50	The traditional registration fee has a scaled structure. BEVs and PHEVs have an additional flat fee. This results in BEVs and PHEVs also following a scaled fee structure.
Ohio		\$100	PHEV fees are in addition to a flat registration fee, which is applied to all vehicles.
Oregon	\$110		The traditional registration fee has a scaled structure. BEVs have an additional flat fee. This results in BEVs also following a scaled fee structure. In lieu of the annual fee, EV owners can opt to participate in the state's road usage charge program, OReGO.
Pennsylvania	\$290		Pending legislative approval.
South Carolina	\$60	\$30	Fee amount is annualized but is paid biannually.
South Dakota	\$50		The traditional registration fee has a scaled structure. BEVs have an additional flat fee. This results in BEVs also following a scaled fee structure.
Tennessee	\$100		BEV fees are in addition to a flat registration fee, which is applied to all vehicles.
Texas	\$200		Newly registered EVs must pay an additional \$200 (i.e., \$400 total the first year).
Virginia	\$64		The traditional registration fee has a scaled structure. BEVs have an additional flat fee. This results in BEVs also following a scaled fee structure. The fee can decrease to \$50 if the receiving jurisdiction does not use the fee revenues for transportation purposes.
Washington	EVs and PHEVs with an all-electric range over 30 miles: \$150 Transportation electrification fee for EVs/PHEVs, except motorcycles: \$75 Electric motorcycles: \$30 Non-plug-in hybrid EVs: \$75		BEV and PHEV fees are in addition to a flat registration fee, which is applied to all vehicles.
West Virginia	\$200	\$100	BEV and PHEV fees are in addition to a flat registration fee, which is applied to all vehicles.
Wisconsin	\$100	\$75	BEV and PHEV fees are in addition to a flat registration fee, which is applied to all vehicles.
Wyoming		\$200	Fees are total, not additional to registration fees.

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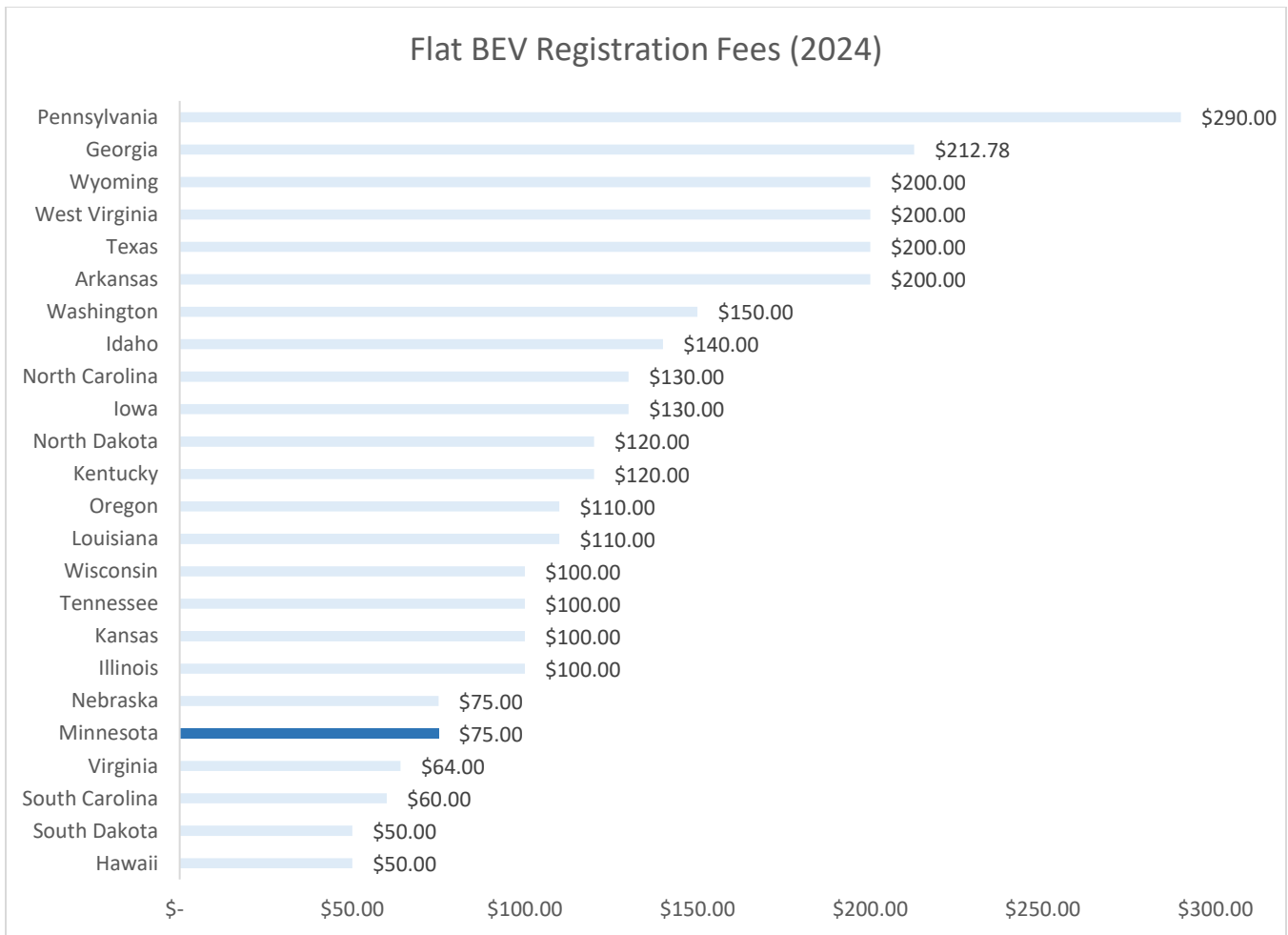


Figure 4: Existing Flat Annual Fees on BEVs (2024)

Six states (including Minnesota) have a flat fee for EV registration that is added on top of traditional registration fees that follow a scaled fee structure. As a result, although EV users are required to pay a flat EV fee, they face total annual registration fees that follow a scale based on either vehicle weight or age and value. This is examined more closely in *Option 2: Scaled EV Registration Fee*.

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Option 2: Scaled EV Registration Fee

Fifteen states use a scaled fee structure based on weight, age, value, miles per gallon (MPG), range, and/or horsepower in which vehicles are taxed at different rates based on their characteristics (Table 3). Some scales apply to all vehicles while others have specific scaling mechanisms for BEVs and/or PHEVs. **Weight-based registration fee scales** have two or more weight tiers in which higher vehicle weight corresponds to higher fee amounts. **Age-based registration fee scales** have two or more tiers of age brackets in which newer vehicles correspond to higher fee amounts. **Value-based registration fee scales** involve factoring in the cost of the vehicle in the registration fee so that more expensive vehicles are charged a higher fee. Some states combine multiple scale systems.

Weight is the most frequently used scaling metric; 10 states use a weight-based element in their scale. Age is the second most frequently used scaling metrics; eight states use an age-based element in their scale.

Scales can be built directly into annual BEV and PHEV fee structures or into traditional vehicle registration fees. When scaled fee structures are incorporated into traditional vehicle registration fees, the scaling mechanism covers all vehicles and may not have been enacted specifically to address BEVs or PHEVs.

Six states (including Minnesota) have a flat fee for EV registration that is added on top of traditional registration fees that follow a scaled fee structure. As a result, although EV owners are required to pay a flat EV fee, they pay total annual registration fees that follow a scale based on either weight or age and value.

$$\text{Total Fees} = \text{Traditional Registration Fees} + (\text{BEV Fees and/or PHEV Fees})$$

Passenger vehicles scaled BEV fees range between \$86 and \$450.75, while scaled PHEV fees range from \$47.50 and \$255.

Table 3. States with Scaled EV Registration Fees

State	Scale	Traditional Registration Fees	BEV Fees	PHEV Fees
Arkansas	Weight	<ul style="list-style-type: none"> • Vehicles 3,000lbs. or less: \$117 • Vehicles 3,000-4,500lbs.: \$25 • Vehicles more than 4,500lbs.: \$30 	\$200	\$100
California	Age + Value	Annual registration fee: \$53 + Transportation improvement fee based on vehicle value: \$27 -\$188	Zero-emission vehicles model year 2020 or later: \$100	
Hawaii	Weight	Weight-based vehicle taxes	\$50	
Idaho	Age	Depends on the age of the vehicle. <ul style="list-style-type: none"> • Vehicles 1-2 Years old: \$69 • Vehicles 3-6 years old: \$57 • Vehicles 7 or more years old: \$45 	\$140	\$75
Iowa	Weight + Age + Value	40¢ per 100lbs. of vehicle weight + Percent of vehicle list price based on vehicle age: <ul style="list-style-type: none"> • Vehicle model 1-7 years old: 1% • Vehicle model 8-9 years old: 0.75% 	\$130	\$65

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		<ul style="list-style-type: none"> Vehicle model 10-11 model years old: 0.5% Vehicle model 12 years or older: \$50 		
<i>Michigan</i>	Weight + Value + Age	Vehicles with a model year of 1984 or newer pay registration fees based on the manufacturer's suggested retail price.	Up to 8000lbs: \$135 Over 8000lbs.: \$235	Up to 8,000lbs: \$47.50 Up to 8,000lbs: \$117.50
<i>Minnesota</i>	Value + Age	Base-fee: \$10 + Value-Based Fee: <ul style="list-style-type: none"> Manufacturer's suggested retail price (MSRP) <ul style="list-style-type: none"> Vehicles Registered Minnesota before November 16, 2020: 1.54% MSRP Vehicles Registered in Minnesota after November 16, 2020: 1.575% MSRP + Age-Based Fee <ul style="list-style-type: none"> Year 1 (100%), Year 2 (95%), Year 3 (90%), Year 4 (80%), Year 5 (70%), Year 6 (60%), Year 7 (50%), Year 8 (40%), Year 9 (25%), Year 10 (10%), Years 11+ (\$20) 	\$75	
<i>Missouri</i>	Weight + HP	According to the vehicle's taxable horsepower. <ul style="list-style-type: none"> Vehicle with a taxable hp of under 12: \$18.25 Vehicle with a taxable hp of over 72: \$51.25 	Alternative fueled passenger motor vehicles up to 18,000 lbs.: \$75	\$37.50
<i>North Dakota</i>	Weight + Age	Fees vary depending on the year of registration and the weight of the vehicle. Vehicles 3,200lbs. - 4,500lbs. for the first six years of registration: \$93	\$120 flat fee	\$50 flat fee
<i>Oklahoma</i>	Weight + Age	Depend on how long the vehicle has been registered in Oklahoma: <ul style="list-style-type: none"> Year 1-4: \$96 Year 5-8: \$86 Year 9-12: \$66 Year 13-16: \$46 Year 17 and over: \$26 	Based on BEV weight: <ul style="list-style-type: none"> Under 6000lbs: \$110 6000-10,000lbs: \$158 Commercial <ul style="list-style-type: none"> 10,000-26,000lbs: \$363 Over 26,000lbs: \$2250 	Based on PHEV weight: <ul style="list-style-type: none"> Under 6000lbs: \$82 6000-10,000lbs: \$118 Commercial <ul style="list-style-type: none"> 10,000-26,000lbs: \$272 Over 26,000lbs: \$1687
<i>Oregon</i>	MPG	\$43 + Additional fees based on mpg: <ul style="list-style-type: none"> Vehicles with 0-19 mpg: \$18 Vehicles with 23-29 mpg: \$23 Vehicles with 40 mpg or greater: \$33 	\$110	EV owners can opt to participate in the state's road usage charge program, OReGO, in lieu of the annual fee.
<i>South Dakota</i>	Weight + Age	Vehicles 0-9 years old: <ul style="list-style-type: none"> Under 2000 lbs.: \$36 2001-4000 lbs.: \$72 4001-6000 lbs.: \$108 Over 6000 lbs.: \$144 Older, larger, and commercial vehicles are subject to higher fees.	\$50	
<i>Texas</i>	Weight + Age	Passenger vehicles under 6,000lbs.: \$50.75 Vehicles over 6,000lbs.: \$54 - \$840	First year: \$400 Year 2-onward: \$200	
<i>Virginia</i>	Weight	\$40.75-\$45.75 depending on vehicle weight.	\$64*	* The fee can decrease to \$50 if the receiving jurisdiction does not use the fee revenues for transportation purposes.

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Washington	Range	\$30	BEVs/PHEVs with an all-electric range over 30 miles: \$150 Transportation electrification fee for BEVs/PHEVs: \$75 Electric motorcycle fee: \$30
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Option 3: Increasing or Indexed EV Registration Fees

Several states have developed increasing or indexed EV registration fees to counteract future inflation, account for future growth in transportation system needs, or offset the declining purchasing power of transportation revenue due to years of fixed-rate structures.

Seven states structure additional EV registration fees to grow over time by establishing an annual fee increase or by tying the fees to the consumer price index or another inflation-related metric (Table 4).

Two states have established a sliding scale fee system in which the fees increase by a set amount over time. Two states index their fees to the consumer price index, two states index their fees to the motor vehicle fuel tax, and one state indexes their fee to the inflation rate.

Table 4. States with Increasing or Indexed Fees

State	BEV Fees	PHEV Fees	Index or Increasing Fee Element
Alabama	\$200	\$100	The fee increases by \$3 every four years. The fees will be reduced by any forthcoming federal fee or surcharge used for highway transportation purposes in the state up to \$50 per year for EVs and \$25 for PHEVs.
California	ZEVs model year 2020 or later: \$100		The fee increases in accordance with the consumer price index.
Indiana	\$150	\$50	Fees are indexed based on the motor vehicle fuel tax.
Iowa	\$130	\$65	Implemented on an increasing scale over time.
Michigan	EVs up to 8000lbs: \$135 EVs over 8000lbs.: \$235	Certain PHEVs up to 8,000lbs: \$47.50 Certain PHEVs over 8,000 pounds: \$117.50	EV fees are indexed based on the motor vehicle fuel tax. Each 1 cent fuel tax increase above 19 cents increases the EV annual fee by \$5 and the PHEV annual fee by \$2.50. The current fees are calculated using a 26.3 cent per gallon gasoline motor vehicle fuel tax. Fees are total, not additional.
Mississippi	\$150	\$75	Fees are indexed to inflation.
Utah	\$120	PHEVs: \$52 Hybrid EVs: \$20 Vehicles fueled by a source other than motor fuel, diesel fuel, natural gas, or propane: \$120	Fees are indexed to the consumer price index. EV owners can opt to participate in the state's road usage charge program in lieu of the annual fee. There is also an option to pay a six-month registration fee as opposed to an annual fee.

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Tax on EV Charging

An “at the pump” equivalent of the gas tax can be created for EVs by levying an excise tax on kilowatt hours charged at a public EV charging station.

Option 4: Tax on EV Charging

Seven states have implemented or are scheduled to implement an EV charging fee at public stations (Table 5). Charging fees range from \$0.0172 per kilowatt hour to \$0.03 per kilowatt hour.

Table 5. EV Charging Station Taxes

State	Charging Tax	Effective Date
<i>Iowa</i>	Tax of \$0.026 per kilowatt-hour on public EV charging stations.	July 2023
<i>Kentucky</i>	Tax of \$0.03 per kilowatt hour on electric vehicle power distributed by an electric power dealer.	January 2024
<i>Montana</i>	Tax of \$0.03 per kilowatt hour or its equivalent on electric current from public electric vehicle charging stations.	July 2023* *Public charging stations already in operation have until July 2025 to install meters to collect the tax. To relieve the tax burden on in-state electric vehicle owners, electric vehicle registration fees will be reduced by 30 percent starting in 2028.
<i>Utah</i>	The retail sale of electricity for EV charging is subject to a 12.5% tax. The tax may be based on kilowatt hours sold, the cost to charge per hour, or a subscription fee.	January 2024
<i>Oklahoma</i>	Tax of \$0.03 per kilowatt hour on public EV charging stations.	January 2024
<i>Pennsylvania</i>	Tax of \$0.0172 per kilowatt hour on public EV charging stations. Under the Pennsylvania Liquid Fuels and Fuels Tax Act (LFFTA) gasoline and diesel fuels are taxed at cents-per-gallon amounts based on the fuels' average wholesale prices, which are determined annually by the state Department of Revenue. The tax on gas is set by statute at 19.25% of the wholesale price of gas, the tax on diesel at 24.75% of the wholesale price of diesel. When the average wholesale price of either fuel is less than \$2.99 per gallon, the Department uses \$2.99 to calculate the tax. Alternative fuels are subject to an Alternative Fuel Tax intended to tax these fuels at the same rate as gasoline and diesel on a "gallon equivalent basis." The basis of this conversion is statutorily set at 114,500 Btu. Electricity is also subject to a gross receipts tax of 6.27%.	January 2024* * First implemented in 2005 at \$0.009 per kilowatt hour.
<i>Georgia</i>	Tax on every 11 kilowatt-hours of usage.	January 2025

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Impacts

Revenue

Assessing the impact of EV adoption on the current HUTDF revenue structure is the first step in evaluating how to make up for the revenue shortfall using additional revenue sources. Table 6 compares projected HUTDF revenue generated over 10 years between two sets of vehicles representative of the broader market. Internal combustion engine (ICE) vehicles are the baseline against which BEV and PHEV revenues are compared.

Table 6. ICEs, PHEVs, and BEVs 10-Year Tax Estimator (2023)

Category	Make/Model (2023)	EV Type	Retail Price	MPG	Current Law: 10-year impacts				
					Gas Tax	MVST & Tab Fees	BEV Tax	HUTD Revenue	Relative contribution
Standard	Hyundai Sonata	ICE	\$25,250	32	\$1,336	\$3,526	\$0	\$4,862	-
	Hyundai Sonata	PHEV	\$28,250	52	\$822	\$3,933	\$0	\$4,755	98%
	Hyundai Kona	BEV	\$33,550	-	\$0	\$4,652	\$750	\$5,402	111%
Luxury	Lexus LS 500	ICE	\$78,535	22	\$1,943	\$10,755	\$0	\$12,698	-
	Volvo XC90 Recharge	PHEV	\$71,900	58	\$737	\$9,855	\$0	\$10,592	83%
	Tesla Model S	BEV	\$87,490	-	\$0	\$11,970	\$750	\$12,720	100%

Note: assumes an average of 15,000 miles traveled at 35 miles per gallon

SOURCE: MNDOT EV FACT SHEET (JUNE 2023)

Comparing standard and luxury vehicles, BEVs have a higher relative HUTDF contribution than their PHEV and ICE counterparts due to the price premium of BEVs and the annual BEV tax. In this example, BEVs cost between \$5,000 and \$15,000 more than similar ICEs or PHEVs, which results in BEV owners paying higher MVST fees. BEVs also pay an additional \$75 tax each year, while PHEVs do not.

For example, over ten years, MnDOT estimates that a battery-electric Hyundai Kona would contribute 11% more revenue to the HUTDF than the gas-powered Hyundai Sonata. However, as EVs get cheaper and possibly lighter in the future, the fee structure may need to be revisited to keep revenues at current levels.

Some forecasts suggest that EVs could become less expensive than their ICE counterparts by 2025 if the cost of batteries continues to fall. If ICE vehicles cost the same or more than EVs, HUTDF revenues could be negatively affected. MnDOT modeled funding scenarios to evaluate potential future impacts of BEVs on state transportation funding over time if people were to choose to replace their ICE with a BEV. The results are shown in

Table 7, with green cells indicating the difference in transportation revenue between BEV and ICE vehicles by BEV price premium and the average fuel economy of the ICE vehicles being replaced.

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Table 7. 2030 Modeled Funding Scenarios – Percent Change in Revenue Between ICE and BEVs

		Average MPG of non-EVs displaced by BEVs						
		19	23	27	31	35	39	43
BEV Price Premium (amount by which BEV sales price is higher than ICE sales price)	\$9,000	4%	7%	10%	12%	13%	15%	16%
	\$7,000	1%	4%	7%	9%	10%	12%	13%
	\$5,000	(2%)	2%	4%	6%	7%	8%	9%
	\$3,000	(4%)	(1%)	1%	3%	4%	5%	6%
	\$1,000	(7%)	(4%)	(2%)	0%	2%	3%	4%
	(\$1,000)	(11%)	(8%)	(5%)	(4%)	(2%)	(1%)	(0%)
	(\$3,000)	(13%)	(10%)	(8%)	(6%)	(5%)	(4%)	(3%)
<p><i>Note: the following assumptions have been made</i></p> <ul style="list-style-type: none"> • 20 percent of the pickup/passenger vehicle (light duty vehicles) fleet would be BEVs in 2030. • More than 40 percent of new vehicle sales are BEVs in 2030. • Vehicle miles traveled growth per capita is 14% lower than 2029. • Revenue impacts are based on the current 10-year tax structure applied to FY 2030-2039. This includes MVST, gas tax, and registration taxes (including the BEV tax). 								

SOURCE: MNDOT EV FACT SHEET(JUNE 2023)

As shown in

Table 7, the highest revenue producing scenarios are when there is a high BEV price premium and/or where BEVs are replacing non-EVs with the highest fuel efficiency. A small BEV price premium of \$1,000 would keep revenues neutral or positive in half of all scenarios. A medium BEV price premium between \$3,000 and \$5,000 would keep revenue neutral or positive in more than half of all scenarios. A high BEV price premium of \$7,000 or more would keep revenue positive in all scenarios.

Beyond the anticipated change in vehicle powertrains, there is a significant amount of effort at MnDOT to facilitate mode shift and reduce vehicle miles traveled (VMT). Commute patterns are also changing due to the expansion of hybrid and remote work environments following the pandemic. A reduction in VMT brought on by mode shift could translate to a reduction in gas tax revenue even if other conditions (e.g., the types of vehicles on the road) were to remain constant. It is also worth noting that motor fuel tax revenue will be impacted by the increasing fuel economy of the ICE fleet. The EV-focused policies identified in this paper would not address the reduction of HUTDF revenue due to increased fuel economy or reduced VMT.

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Equity

This TRS aims to identify equitable fee structures for all motorists using the Minnesota transportation system, including BEV, PHEV, and ICE drivers. Equity has different meanings in different contexts. For the purposes of this TRS, the term “equitable” means that all motorists pay their “fair share” without adverse impact to drivers or owners of a particular type of vehicle. In this context, it is not the same as MnDOT’s definition of transportation equity that addresses benefits and burdens to disadvantaged populations and underserved communities.

Equity Impacts of Registration Fees

Minnesota’s flat EV fees do not produce equitable outcomes between BEV, PHEV, and ICE drivers. Because PHEVs are exempt from the BEV fee, PHEV owners avoid paying both the gas tax that their ICE counterparts pay and the EV registration fee that their BEV counterparts pay. The price premium of BEVs also leads to BEVs having a higher relative contribution to HUTDF via the MVST compared to PHEVs and ICEs. Expanding the registration fees to include PHEVs would ensure that both BEV drivers and PHEV drivers contribute to the HUTDF.

Scaled vehicle registration fees can offer a more equitable approach than flat EV registration fees. Given that currently, EVs weigh more on average than equivalent ICE vehicles, weight-based registration fee scales would collect more revenue from EVs than ICE vehicles of the same body type. Proponents of the weight-based registration fees note that it ensures drivers pay to use and repair America’s roadways relative to their system impact, as heavier vehicles cause more wear.

Age-based registration fee scales account for advancements in fuel efficiency in ICE and hybrid vehicles. Value-based registration fee scales factor in the cost of the vehicle in its registration price. This accounts for the difference between affordable and luxury electric vehicles.

Equity Impacts of EV Charging Taxes

Taxes levied on public EV charging create a direct connection between EV usage and subsequent revenue available for roadway repair and maintenance. The more that someone drives and recharges their EV at a public station, the more they will pay in charging taxes. This mirrors the connection that gas taxes make between ICE vehicles and roadway usage. Implementing a tax at public charging stations would ensure that both BEV drivers and PHEV drivers contribute to the HUTDF.

While public charging stations are available in various locations throughout Minnesota, some BEV and PHEV owners may opt to install personal EV charging stations in their own home for convenience. Personal EV charging station installation costs between \$1,000 and \$2,500, depending on region, station type, and whether it is portable or hardwired and therefore may not be an accessible or affordable option for lower-income EV

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owners, people who rent, or people who otherwise are unable to install personal chargers.¹⁹ As higher-income EV owners may be more likely to install chargers at their own home, which would not be subject to an EV charging tax, an inequitable outcome may arise as those higher-income EV owners could avoid paying EV charging taxes at public charging stations.

Policy

Implementing EV registration fee changes would require a different approach than implementing EV charging taxes.

Policy Impacts of Registration Fees

EV registration fees are situated within the Motor Vehicle Registration Tax, which is put in place on motor vehicles that use public streets and highways. The Motor Vehicle Registration Tax is governed by:

- Article XIV of the Minnesota Constitution
- Minn. Stat. Ann. §168.013; 2020 Minn. Laws, Chap. 74 – Tax on passenger vehicles

Registration fees are well-established and require little additional administrative costs.

Policy Impacts of Charging Taxes

The Motor Fuel Excise Tax, also referred to as the Gas Tax, is an annual indexed rate tax on any means or substance used for propelling vehicles on the public highways in Minnesota. This tax is levied on gasoline, diesel fuel, compressed natural gas, and a variety of other special fuels. Because the legislature may levy an excise tax on any “means or substance used for propelling vehicles,” it could theoretically be applied to electricity, or more specifically, to kilowatt hours at charging stations. EV charging fees could be situated within the Motor Vehicle Fuel Tax, which is governed by:

- Article XIV of the Minnesota Constitution
- Minn. Stat. 296A – Tax on petroleum and other fuels

Political and public resistance to excise taxes can build during price spikes.

¹⁹ <https://evchargingsummit.com/blog/how-much-does-installing-an-ev-charger-cost/#:~:text=The%20national%20average%20cost%20for,or%20hardwired%20into%20your%20home.>

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Other Considerations

Implementation of EV Fees and Taxes

EV registration fees are situated within the Motor Vehicle Registration Tax, which is put in place on motor vehicles that use public streets and highways. Registration fees are well-established and require little additional administrative costs. To change the existing EV registration fee structure, Minn. Stat. Ann. §168.013. would need to be amended.

In Minnesota, the Motor Fuel Excise Tax, also referred to as the Gas Tax, is an annual indexed rate tax on “means or substance used for propelling vehicles” (Minn. Stat. 296A). This tax is currently levied on gasoline, diesel fuel, compressed natural gas, and a variety of other special fuels. EV charging fees on electricity could potentially be situated within the Motor Vehicle Fuel Tax.

Use of Incentives to Encourage Adoption of EVs

Minnesota’s EV Plan aims to accelerate EV sales and usage by providing incentives. The Minnesota Department of Commerce launched an EV Rebate Program on February 7, 2024. This program provides a rebate for both new and used EVs purchased or leased on or after May 25, 2023. New EVs with a MSRP of \$55,000 or less are eligible for a rebate of up to \$2,500 and used EVs with a purchase price of \$25,000 or less are eligible for a rebate of up to \$600.²⁰ Minnesota has also established a one-time E-ZPass toll credit of \$250 for BEV and \$125 for PHEVs.²¹

Tax incentives such sales tax deductions, sales tax exemptions, rebates, and income tax credits, are another mechanism to incentivize EV adoption. EV sales incentives are applied at or around the time of EV purchase, whereas registration fees and charging taxes are applied on an ongoing basis to fund the maintenance and preservation-related impacts of using the transportation system.

Providing a sales tax deduction, sales tax exemption, rebate, or income tax credit in tandem with EV and PHEV registration fees or charging taxes can both incentivize people to switch to EV or PHEVs in the short term through tax incentives while also ensuring that they contribute to transportation revenue over the life of the vehicle via registration fees or charging taxes. It is critical that sales tax incentives are provided in tandem with fees, as implementing an EV sales tax deduction or exemption alone could result in EV owners paying none or only some of the Motor Vehicle Sales Tax. This could have the effect of decreasing HUTDF revenues, and thereby would conflict with the goal of addressing HUTDF deficiencies.

²⁰ <https://mn.gov/commerce/energy/consumer/energy-programs/ev-rebates-faq.jsp>

²¹ <https://www.dot.state.mn.us/ezpassmn/news.html>

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Residents of all states are currently eligible to receive a federal tax credit of up to \$7,500 for qualified EV purchases.²² To qualify, an individual or business must purchase a new EV for use (i.e., not resale) primarily in the U.S. Additionally, the purchaser’s modified adjusted gross income may not exceed \$300,000 for married couples filing jointly, \$225,000 for heads of households, or \$150,000 for all other filers.

Nineteen states offer an additional incentive, either a state tax credit or rebate, beyond the federal credit (

Table 8). Tax credits range from \$750 to \$7,500. Sales tax deductions, exemptions, or rebates ranged from \$1,000 to \$4,000. Seven states provide incentives in tandem with registration fees charging taxes on BEVs or PHEVs.

Table 8. States with EV Tax Credits, Deductions, Exemptions, or Rebates

State	Tax Credit	Sales Tax Deduction, Exemption, or Rebate	Implements a Registration Fee or Charging Tax
Alaska	\$1000		
California	\$750 - \$7,000		X
Colorado	\$5000		
Connecticut	\$750 - \$7500		
Delaware		\$1000 - \$2500	
Illinois		\$4000	X
Kansas	Up to \$2400		X
Maine	Up to \$7500		
Maryland	\$3000 for purchase price under \$50,000		
Massachusetts	Up to \$3500		
Minnesota		New EVs with a base MSRP of \$55,000 or less: rebate up to \$2,500 Used electric vehicles with a purchase price of \$25,000 or less: rebate up to \$600	
New Jersey		EVs are exempt from sales tax (6.625%) \$25 per mile of EPA-rated all-electric range up to \$4000	
New York	Up to \$2000		
Oklahoma	Up to \$5500		X
Oregon		Up to \$5000, varies by income level	X
Pennsylvania	Up to \$3000		
Vermont	Up to \$4000		
Virginia	\$2500		X
Washington			X

²² <https://www.irs.gov/credits-deductions/credits-for-new-clean-vehicles-purchased-in-2023-or-after>

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Allocating Revenue from EV Fees and Taxes

Twenty-nine states deposit EV fee revenues into funds for highways, road maintenance, safety improvements, or local governments. Five states also allocate some fee revenue to support EV charging infrastructure or to directly address revenue shortfalls from the gas tax:

- Alabama: The first \$150 of fee revenues from EVs and first \$75 of fee revenues from PHEVs is allocated to the state (66.67%), counties (25%), and cities (8.33%). The remainder is deposited into the Rebuild Alabama Fund, which funds electric vehicle charging infrastructure through the Electric Transportation Infrastructure Grant Program until total registrations of BEVs and PHEVs exceed 4% of total vehicle registrations. Once this threshold is reached, revenues are divided between the state, counties, and cities as noted above to fund construction, maintenance and repair of public roads, highways, and bridges, and for any other purpose for which the Rebuild Alabama Fund may lawfully be used.
- Colorado: 60% of EV fee revenues are deposited into the Highway Users Tax Fund and 40% of fee revenues (\$20) are deposited into the Electric Vehicle Grant Fund, which administers grants to install charging stations and to offset station operating costs.
- Ohio: 55% of revenues are deposited into the highway operating fund and 45% of revenues are deposited into the gasoline excise tax fund for municipalities (19.3%), counties (16.7%), and townships (9%).
- Oklahoma: 100% of funds from these fees go to a new Driving on Road Infrastructure with Vehicles of Electricity Revolving Fund until July 1, 2027. After this date, 85% goes to the revolving fund and 15% is apportioned to the counties of the state.
- Washington: Of the funds collected through the EV registration fee, 70% goes to the motor vehicle fund, 15% to the transportation improvement account, and 15% to the rural arterial trust account. The \$75 transportation electrification fee goes toward EV charging stations.

Next Steps

The following next steps are presented to MnDOT as it reviews options, evaluates the approaches of other states relative to Minnesota's current approach, and considers whether any changes to either revenue collection methods or incentives are needed.

Evaluate the potential revenue options against forecast revenue gaps:

- Explore expanding the existing BEV registration fee (e.g., create a tier for PHEVs, add a weight element to the fee scale, apply an index or increase schedule to the fee).

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- Explore the legal and policy implications of implementing a charging tax on public charging stations.
- Decide whether to allocate a certain percentage of the revenue to fund EV infrastructure.
- Consider other incentives in addition to a registration fee and/or charging tax.

Conduct a deeper analysis of peer states:

- Assess ease of implementation by further examining states that have a similar funding structure or that hold a similar role in the legislative process to determine ease of implementation.
- Examine the approaches of Oregon, South Dakota, Texas, and Virginia, as these states have similar fee structures in which BEV fees are applied on top of a scaled traditional registration fee structure.
- Consider regional trends by further analyzing the EV policies in neighboring states (e.g., Iowa, Wisconsin).

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Appendix A. Inventory of State Fees and Incentives

Table 9. Inventory of State Fees and Incentives

State	Applies to	Traditional Fees	EV Fees	Total Annual Fees	Fee Distribution	Incentives
Alabama	EVs PHEVs	Registration Fee: \$15-23 Additional Annual Fee: \$50 Additional ad valorem tax and local fees apply.	EVs: \$200 PHEVs: \$100 Starting in 2023, the fee will increase by \$3 every four years. The fees will be reduced by any forthcoming federal fee or surcharge up to \$50 per year for EVs and \$25 for PHEVs provided those federal fees are used for highway transportation purposes in the state.	EVs: \$265-\$273 PHEVs: \$165-\$173 In addition to all other fees and taxes.	The first \$150 of fee revenues from EVs and first \$75 of fee revenues from PHEVs is allocated as follows: <ul style="list-style-type: none"> • 66.67% to the state. • 25% to counties. • 8.33% to cities. The remainder is deposited into the Rebuild Alabama Fund, which funds electric vehicle charging infrastructure through the Electric Transportation Infrastructure Grant Program until total registrations of BEVs and PHEVs exceed 4% of total vehicle registrations. Once this threshold is reached, fees drop to \$150/year for BEVs, \$75 for PHEVs with revenues divided between the state, counties, and cities as noted above to fund construction, maintenance and repair of public roads, highways, and bridges, and for any other purpose for which the Rebuild Alabama Fund may lawfully be used.	
Alaska						\$1000 tax credit
Arkansas	EVs Hybrid EVs	Annual registration fees are dependent on vehicle weight <ul style="list-style-type: none"> • Vehicles 3,000lbs. or less: \$17 • Vehicles 3,000-4,500lbs.: \$25 	EVs: \$200 Hybrid EVs: \$100	EVs <ul style="list-style-type: none"> • Vehicles 3,000lbs. or less: \$217 • Vehicles 3,000-4,500lbs.: \$225 • Vehicles more than 4,500lbs.: \$230 Hybrid EVs	Revenues are considered “special revenues,” distributed to the State Highway and Transportation Department Fund.	

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		<ul style="list-style-type: none"> Vehicles more than 4,500lbs.: \$30 <p>Additional validation decal fee may apply</p>		<ul style="list-style-type: none"> Vehicles 3,000lbs. or less: \$117 Vehicles 3,000-4,500lbs.: \$125 Vehicles more than 4,500lbs.: \$130 <p>In addition to all other fees.</p>		
California	Zero Emissions Vehicles	<p>Annual registration fee: \$53</p> <p>Transportation Improvement fee: \$27 - \$188 based on vehicle value.</p>	<p>Zero-emission vehicles model year 2020 or later: \$100</p> <p>Effective January 2021 and every year after, the fee will increase in accordance with the consumer price index.</p>	Zero Emissions Vehicles: \$180 - \$341	Following deductions from DMV administrative costs, revenues are deposited into the Road Maintenance and Rehabilitation Account.	\$750 - \$7,000 tax credit
Colorado	PHEVs	Annual registration fees are based on vehicle weight and type.	PHEVs: \$50 additional annual fee	Annual fees include the \$50 annual fee in addition to traditional registration fees, which vary by vehicle weight and type.	<p>60% of EV fee revenues (\$30) are deposited into the Highway Users Tax Fund.</p> <p>40% of fee revenues (\$20) are deposited into the Electric Vehicle Grant Fund, which administers grants to install charging stations and to offset station operating costs.</p>	Tax Credit: \$5000
Connecticut						Tax Credit: \$750 - \$7500
Delaware						Rebate: \$1000 - \$2500
Georgia	Alternative Fueled Vehicles	\$20	<p>Statutory base fee: \$200</p> <p>Noncommercial alternative fueled vehicle fee: \$212.78</p>	Noncommercial alternative fueled passenger vehicles: \$232.78	Revenues must be used exclusively for "transportation purposes," including roads, bridges, public transit, rails, airports, buses, seaports; accompanying infrastructure and services necessary to provide access to these facilities; and paying general obligation debt and other multiyear financing obligations.	
Hawaii	EV	<p>Annual registration fee: \$45</p> <p>Additional vehicle weight taxes apply.</p>	EVs: \$50	<p>\$95</p> <p>In addition to other taxes.</p>	Revenues are deposited into the State Highway Fund.	

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Idaho	EVs PHEVs	Annual registration fees depend on the age of the vehicle. <ul style="list-style-type: none"> Vehicles 1-2 Years old: \$69 Vehicles 3-6 years old: \$57 Vehicles 7 or more years old: \$45 	EVs: \$140 PHEVs: \$75	EVs: \$209, \$197 or \$185 PHEVs: \$144, \$132 or \$129	All fees deposited into the Highway Distribution Account as follows: <ul style="list-style-type: none"> 40% to localities for construction and maintenance of highways and bridges and to fund requirements on unpaid bonds. 60% to the state highway account for construction and improvement of state highways. 	
Illinois	EV	Annual registration fee: \$148 State Police Vehicle Fund fee: \$1 Park and Conservation Fund fee: \$2	EVs: \$100	EVs: \$251	\$1 of the additional fee is allocated to the Secretary of State Special Services Fund and the remainder deposited into the Road Fund.	Rebate: \$4000
Indiana	EV Hybrid EVs	Registration fee: \$21.35 Transportation Infrastructure Improvement Fee: \$15 Additional taxes may apply.	EVs: \$150 Hybrid EVs: \$50 The fee is indexed to the same inflation mechanism as the motor fuel tax.	EVs: \$186.35 Hybrid EVs: \$86.35	Revenues are deposited into the Local Road and Bridge Matching Grant Fund for projects undertaken by local units to repair/increase road and/or bridge capacity.	
Iowa	EVs PHEVs	Based on vehicle weight and a percentage of the vehicle list price based on the vehicle's age. 40 cents per 100 lbs. of vehicle weight; and <ul style="list-style-type: none"> Vehicle model 1-7 years old: 1% of the list price Vehicle model 8-9 years old: 0.75% of the list price Vehicle model 10-11 model years old: 0.5% of the list price 	EVs: \$130 PHEVs: \$65 Implemented an increasing scale over time	Annual fees include EV fees in addition to applicable registration fees.	Revenues are deposited into the Road Use Tax Fund	

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		<ul style="list-style-type: none"> Vehicle model 12 years or older: \$50 				
Kansas	EVs PHEVs	<p>Depends on weight: \$30-\$40</p> <p>Additional county fees apply.</p>	<p>EVs: \$100</p> <p>PHEVs: \$50</p> <p>The state's EV fees are total, not additional. EVs and PHEVs are not charged a separate or passenger vehicle registration fee, but instead are charged an increased fee.</p>		The majority of fee revenues are deposited into the State Highway Fund.	Tax Credit: Up to \$2400
Kentucky	EVs PHEVs	<p>Annual registration fee: \$11.50</p> <p>Commercial vehicles designed to carry over 15 persons assessed a fee based on weight: \$30 - \$1410</p>	<p>EVs: \$120</p> <p>Hybrid EVs and electric motorcycles: \$60</p>	<p>EVs: \$131.50</p> <p>Hybrid EVs: \$71.50</p> <p>Additional annual property tax assessed on all vehicles in the state.</p>	<p>50% of revenues are deposited in the state's road maintenance fund</p> <p>50% of revenues are deposited in the general fund</p>	
Louisiana	EVs Hybrid EVs	<p>Title fee at the time of registration: \$68.50</p> <p>License plate registration fees (every two years) based on purchase price of the vehicle: at least \$20</p>	<p>EVs: \$110</p> <p>Hybrid EVs: \$60</p>	<p>EVs: \$198.50 or more</p> <p>Hybrid EVs: \$148.50 or more</p> <p>In addition to other applicable taxes.</p>	<p>70% of the tax proceeds will go toward road and bridge projects slated in the Department of Transportation's Highway Priority Program.</p> <p>30% of revenues are deposited into the Parish Transportation Fund for use by local governments.</p>	
Maine						Tax Credit: Up to \$7500
Maryland						Tax Credit: \$3000 for purchase price under \$50,000
Massachusetts						Tax Credit: Up to \$3500
Michigan	EVs PHEVs	Vehicles with a model year of 1984 or newer pay registration fees based on the manufacturer's suggested retail price.	Michigan indexes its EV fees based on the motor vehicle fuel tax. Each 1 cent fuel tax increase above 19 cents	Annual fees include the EV fees in addition to traditional fees, which vary depending on vehicle price.	<p>Some revenues are deposited into the Michigan Transportation Fund for road maintenance carried out by cities, villages and counties.</p> <p>Other revenues are deposited into the Scrap Tire Regulation Fund.</p>	

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		Additional fees may apply.	<p>increases the BEV annual fee by \$5 and the PPHEV annual fee by \$2.50. The current fees, calculated using a 26.3 cent per gallon gasoline motor vehicle fuel tax, are as follows:</p> <p>PHEVs</p> <ul style="list-style-type: none"> • Certain PHEVs up to 8,000lbs (\$30 base fee): \$47.50 • Certain PHEVs over 8,000 pounds (\$100 base fee): \$117.50 <p>EVs</p> <ul style="list-style-type: none"> • EVs up to 8000lbs (\$100 base fee): \$135 • EVs over 8000lbs. (\$200 base fee): \$235 			
Minnesota	EV	\$10 plus 1.25% of the vehicle's base value	EVs: \$75	EVs: \$85 in addition to 1.25% of the vehicles base value	Revenues are deposited into the Highway User Tax Distribution Fund.	<p>New vehicles: up to \$2,500 rebate for vehicles with MSRP up to \$55,000</p> <p>Used vehicles: Up to \$600 rebate for vehicles with purchase price up to \$25,000</p>

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Mississippi	EVs PHEVs	Private passenger carriers' tax: \$15 Also subject to an ad valorem tax at the time of registration.	EVs: \$150 Hybrid EVs: \$75 Beginning July 1, 2021, fees will be indexed to inflation.	EVs: \$165 Hybrid EVs: \$90 In addition to other applicable taxes.	Revenues are apportioned for the same purposes and in the same proportion as specified for gasoline and diesel fuel taxes during the previous state fiscal year and such funds must be used solely for the repair and maintenance of roads, streets, and bridges.	
Missouri	PHEVs Alternative Fuel Vehicles	According to the vehicle's taxable horsepower. <ul style="list-style-type: none"> Vehicle with a taxable horsepower of under 12: \$18.25 Vehicle with a taxable horsepower of over 72: \$51.25 Additional processing fees apply.	Alternative fueled passenger motor vehicles up to 18,000 lbs.: \$75 PHEVs: \$37.50	Depending on the vehicle's horsepower <ul style="list-style-type: none"> Alternative fueled passenger vehicles: \$93.25 - \$126.25 PHEVs: \$55.75 - \$88.75 	Revenues are deposited into the State Highway Fund.	
Nebraska	Alternative Fuel Vehicles	Annual registration fee: \$15 Additional taxes and fees are collected at the time of registration.	Alternative fuel vehicles: \$75	Alternative fuel vehicles: \$90 In addition to all other annual fees and taxes.	Revenues deposited into the Highway Trust Fund.	
New Jersey						Rebate: \$25 per mile of EPA-rated all-electric range up to \$4000 The EV purchase is exempt from sales tax.
New York						Tax Credit: Up to \$2000
North Carolina	EVs	\$36	EVs: \$130	EVs: \$166	85% of revenues are deposited into the Highway Fund to support existing transportation systems, including resurfacing highways, replacing bridges, paving secondary roads.	

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					15% of revenues are deposited into the Highway Trust Fund.	
North Dakota	EVs PHEVs	Fees vary depending on the year of registration and the weight of the vehicle. <ul style="list-style-type: none"> Vehicles 3,200lbs. - 4,500lbs. for the first six years of registration: \$93 	Additional annual road use fee <ul style="list-style-type: none"> EVs: \$120 PHEVs: \$50 	EVs: \$213 and up PHEVs: \$143 and up	Revenues are deposited into the highway tax distribution fund.	
Ohio	EV & PHEV	Annual registration renewal fee: \$31	EVs: \$200 Hybrid EVs: \$100	EVs: \$231 Hybrid EVs: \$131	55% of revenues are deposited into the highway operating fund 45% of revenues are deposited into the gasoline excise tax fund: <ul style="list-style-type: none"> 19.3% to municipalities. 16.7% to counties. 9% to townships. 	
Oklahoma	EVs	Based on how long a vehicle has been registered in the state, decreasing over time: <ul style="list-style-type: none"> Year 1-4: \$96 Year 5-8: \$86 Year 9-12: \$66 Year 13-16: \$46 Year 17 and over: \$26 	EVs <ul style="list-style-type: none"> Under 6000 lbs. (Class 1): \$110 6000-10000 lbs. (Class 2): \$158 10000-26000 lbs. (Class 3-6): \$363 Over 26000 lbs. (Class 7-8): \$2250 PHEVs <ul style="list-style-type: none"> Under 6000 lbs. (Class 1): \$82 6000-10000 lbs. (Class 2): \$118 10000-26000 lbs. (Class 3-6): \$272 Over 26000 lbs. (Class 7-8): \$1687 	EV and PHEV fees are in addition to traditional registration fees. Total fees for most passenger EVs and PPHEVs (Class 1) would be either \$206 or \$178, respectively.	100% of funds from these fees go to a new Driving on Road Infrastructure with Vehicles of Electricity (DRIVE) Revolving Fund until July 1, 2027. After this date: <ul style="list-style-type: none"> 85% goes to the revolving fund 15% is apportioned to the counties of the state 	Tax Credit: Up to \$5500

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Oregon	EVs	\$43 Additional fees are assigned by miles per gallon (mpg): <ul style="list-style-type: none"> Vehicles with 0-19 mpg: \$18 Vehicles with 23-29 mpg: \$23 Vehicles with 40 mpg or greater: \$33 	EVs: \$110 Electric vehicle owners can opt to participate in the state's road usage charge program, OReGO, in lieu of the annual fee.	EVs: \$153	Revenues support state and local transportation systems through road and bridge improvements, enhanced safety measures, and increased transit options.	Rebate: Up to \$5000, varies by income level
Pennsylvania						Tax Credit: Up to \$3000
South Carolina	EVs Hybrid EVs	Depending on registrant age: \$18-20*	EVs: \$60* Hybrid EVs: \$30*	EVs: \$78-\$80* Hybrid EVs: \$48-\$50*	Revenues are deposited into the Infrastructure Maintenance Trust Fund, to be used exclusively for repairs, maintenance, and improvements to the existing transportation system. Fees are collected biennially	
South Dakota	EVs	Vehicles 0-9 years old: <ul style="list-style-type: none"> Under 2000 lbs.: \$36 2001-4000 lbs.: \$72 4001-6000 lbs.: \$108 Over 6000 lbs.: \$144 Older, larger, and commercial vehicles are subject to higher fees.	EVs: \$50	Non-commercial EVs: \$86 - \$194.	All fees are deposited into the state highway fund.	
Tennessee	EVs	\$23.75	EVs: \$100	EVs: \$123.75	Revenues are deposited into the highway fund.	
Texas	EVs	Based on Vehicle Weight Class <ul style="list-style-type: none"> Passenger vehicles under 6,000lbs.: \$50.75 Vehicles over 6,000lbs.: \$54 - \$840 	New EVs: \$400 Registration fee annually: \$200	New EVs: \$450.75 Noncommercial EV passenger vehicles: \$250.75	Revenues must be deposited into the state highway fund.	
Utah	EVs Hybrid EVs PHEVs	\$44	EVs: \$120 Vehicles fueled by a source other than motor fuel, diesel	EVs: \$164 Plug-in hybrids: \$96 Hybrid EVs: \$64	Revenues are deposited in the Transportation Fund	

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			<p>fuel, natural gas, or propane: \$120</p> <p>PHEVs: \$52</p> <p>Hybrid EVs: \$20</p> <p>Beginning Jan. 1, 2022, fees are indexed to the consumer price index.</p> <p>EV owners can opt to participate in the state's road usage charge program in lieu of the annual fee.</p>	<p>There is also an option to pay a six-month registration fee as opposed to an annual fee.</p>		
Vermont						Tax Credit: Up to \$4000
Virginia	EVs Alternative Fuel Vehicles	<p>\$40.75-\$45.75 depending on vehicle weight.</p> <p>Additional local fees may apply.</p>	<p>Alternative fuel vehicles or electric motor vehicles: \$64</p> <p>Virginia's EV fee can decrease to \$50 if the receiving jurisdiction does not use the fee revenues for transportation purposes.</p>	<p>Annual fees of \$104.75 or \$109.75 depending on vehicle weight.</p>	<p>Revenues are deposited into the Highway Maintenance and Operating Fund and must be used for district transportation purposes.</p>	Tax Credit: \$2500
Washington	EVs PHEVs Hybrid EVs	<p>\$30</p> <p>Additional filing and service fees apply.</p>	<p>EVs and PHEVs with an all-electric range over 30 miles: \$150</p> <p>Transportation electrification fee for EVs/PHEVs,</p>	<p>EVs: \$255</p> <p>Non-plug-in hybrids: \$180</p>	<p>Of the funds collected through the EV registration fee, 70% goes to the motor vehicle fund, 15% goes to the transportation improvement account, and 15% goes to the rural arterial trust account.</p> <p>The \$75 transportation electrification fee goes toward EV charging stations.</p>	

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			except motorcycles: \$75 Electric motorcycles: \$30 Non-plug-in hybrid EVs: \$75			
West Virginia	EV Hybrid EVs	\$51.50	EVs: \$200 Hybrid EVs: \$100	EVs: \$251.50 Hybrid EVs: \$151.50	Revenues from fees on vehicles operated on hydrogen, natural gas or a combination of electricity and petrochemicals are deposited into the State Road Fund, which pays the principal and interest due on state bonds issued for the fund, funding the administration expenses for the Division of Highways, and state road maintenance, construction, and improvement. Revenues from fees on electric vehicles are deposited into the state's Transportation Fund.	
Wisconsin	EV Hybrid EVs	\$85	EVs: \$100 Hybrid EVs: \$75	EVs: \$185 Hybrid EVs: \$160	\$75 annual fee for hybrid electric vehicles and \$100 for nonhybrid electric vehicle is disbursed to the state's Transportation Fund.	
Wyoming	EV	\$30 Additional county fees may apply.	EVs: \$200 The state's EV fees are total, not additional. Plug-in electric vehicles are not charged a separate or passenger vehicle registration fee, but instead are charged an increased fee of \$200.		Revenues are deposited into the state highway fund. While the state initially enacted a one-time \$50 decal fee in 2015, the legislature clarified its intent that the fee be annual in 2016 and increased the fee amount in 2019.	
<p>Source: https://www.ncsl.org/energy/special-fees-on-plug-in-hybrid-and-electric-vehicles https://taxfoundation.org/data/all/state/electric-vehicles-ev-taxes-state/</p>						

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